
Hoya jianfenglingensis (Apocynaceae), a New Species from Hainan, China

Shao-yun He

College of Horticulture, South China Agricultural University, Guangzhou 510642, People's Republic of China. syhe2001@163.com

Ping-tao Li and Jia-yi Lin*

College of Forestry, South China Agricultural University, Guangzhou 510642, People's Republic of China

Guoyang Lin

Pennsylvania State University, 221 Shields Building, University Park, Pennsylvania 16802, U.S.A. gyl1@psu.edu

Hui-lan Zeng

College of Horticulture, South China Agricultural University, Guangzhou 510642, People's Republic of China

*Author for correspondence: Li85280485@126.com

ABSTRACT. *Hoya jianfenglingensis* Shao Y. He & P. T. Li (Apocynaceae) is described as a new species from Hainan, China. The morphological characters of *H. jianfenglingensis* are illustrated and compared with the related species, *H. fungii* Merr. and *H. carnosa* (L. f.) R. Br. *Hoya jianfenglingensis* differs in its leaf indumentum, the prominent lateral veins in six to 10 pairs, the evident glands at the corona base, and the smaller corolla (only to 1.5 cm diam.). *Hoya jianfenglingensis* is assigned to section *Hoya* within the genus on the basis of the acute outer angle of the corona lobes.

Key words: Apocynaceae, China, Hainan, *Hoya*, *Hoya* sect. *Hoya*, IUCN Red List.

Hoya R. Br. is a medium-sized genus within the Apocynaceae with ca. 200 species and is widely distributed in tropical and subtropical areas from eastern Asia throughout the Pacific archipelago and Oceania. Twenty-two species, three varieties, and two forms were reported from China (Tsiang & Li, 1977), but Li et al. (1995) later considered 32 species and a single variety for the country, with *H. baishaensis* Shao Y. He & P. T. Li a recent addition to *Hoya* of China (He et al., 2009). Most species occur in Yunnan, Guangxi, and Hainan provinces, and there are 22 species with a white corolla in China. Recently, Forster and Liddle (1996) estimated the genus at over 300 species, distributed in Malaysia,

New Guinea, and throughout the Philippines and western Pacific Islands, extending in Asia to include the Indian subcontinent. Six species are native to Australia, with one endemic and one naturalized. Jagtap and Singh (1999) reduced the species estimate to ca. 200 species distributed throughout the moister eastern tropics from Nepal and Ceylon to South China and northern Australia and in the Pacific region, with 29 species noted for India. Although Rintz (1978) agreed with Ridley (1923) on a species total of 25 *Hoya* in Malaysia, they significantly differed in five species. Only one species has been reported from Pakistan (Nasir & Ali, 1972).

During two expeditions to Jianfengling, Hainan, in the autumn of 2006 and summer of 2008, three undetermined specimens of *Hoya* with white corollas were collected by three of the authors. Based on comparison with herbarium specimens in CANT, HITBC, IBSC, and KUN, and study of the pertinent literature (Hooker, 1885; Costantin, 1912; Merrill, 1932; Nasir et al., 1972; Tsiang & Li, 1974, 1977; Rintz, 1978; Li, 1994; Gilbert et al., 1995; Li et al., 1995; Foster & Liddle, 1996; Lu et al., 1998; Jagtap & Singh, 1999), we determined that these collections did not correspond to previously described *Hoya*, and we describe the taxon as new here.

Hoya jianfenglingensis Shao Y. He & P. T. Li, sp. nov. TYPE: China. Hainan: Jianfengling,

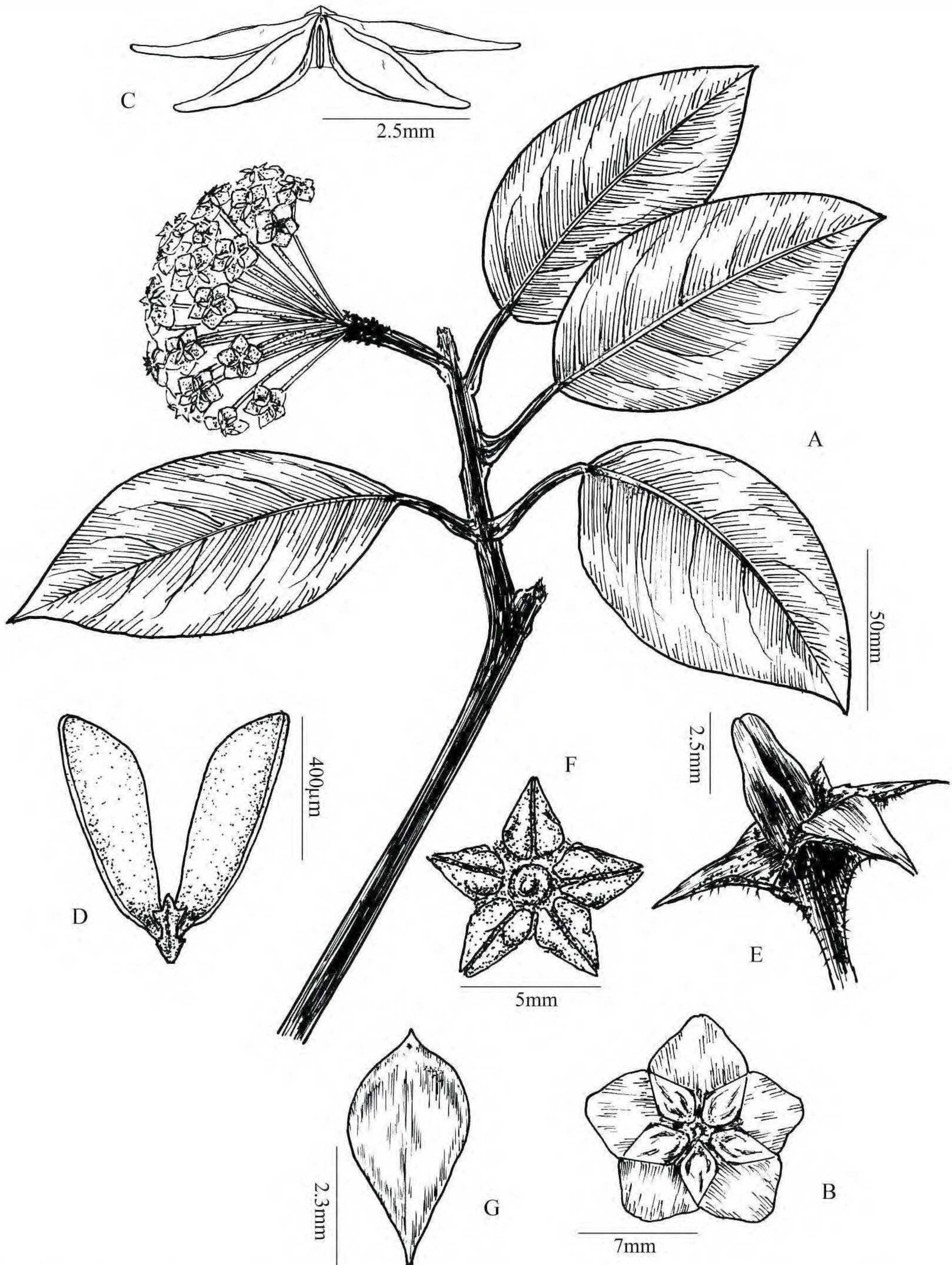


Figure 1. *Hoya jianfenglingensis* Shao Y. He & P. T. Li. —A. Flowering stem. —B. Apical view of flower. —C. Side view of corona. —D. Pollinarium. —E. Calyx and ovary. —F. Back view of corona. —G. Glandule at the base of corona scale. Drawn from the holotype *He et al.* 0607281 (CANT).

18°44'N, 108°50'E, on tree in montane tropical rainforest, 1040 m, 28 July 2006, *Shao Y. He, P. Y. Li & J. Y. Lin* 0607281 (holotype, CANT, CANT photo at MO). Figure 1.

Species *Hoyae fungii* Merr. affinis, sed ab ea caulibus robustis pubescentibus, foliis utrinque pubescentibus nervis lateralibus in 6 ad 10 paribus manifestis, corollis 1.3–1.5 cm diametro atque coronis rubris ad basim glanduliferis differt.

Table 1. Morphological comparison of *Hoya jianfenglingensis* and two similar species.

Characters	<i>H. carnosa</i>	<i>H. fungii</i>	<i>H. jianfenglingensis</i>
Indumentum	glabrous except for inflorescences	glabrous except for pedicel and calyx	pubescent on young stem, calyx, and leaf blade on both surfaces
Leaf shape	broadly ovate to ovate-oblong or elliptic	ovate, elliptic to elliptic-oblong	obovate or elliptic
Blade apex	obtuse or short acuminate	acute or short acuminate	acuminate
Blade base	rounded to shallowly cordate	rounded	round or broadly cuneate
Blade length	3.5–13 cm	8–20 cm	11–14 cm
Blade width	3–5 cm	4.5–9 cm	5–7 cm
Leaf venation	ca. 4 inconspicuous pairs	ca. 7 pairs evident	6 to 10 conspicuous pairs
Corolla diameter	1.5–2 cm	1.5–1.8 cm	1.3–1.5 cm
Corona color	red	light yellow	red
Glandules at corona base	no	no	yes
Distribution	China: Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan	China: Guangdong, Guangxi, Hainan, Yunnan	China: Jianfengling, Hainan

Epiphytic, high climbing to 8 m or more; stems branched, stout, hoary pubescent. Leaves opposite, rarely alternate; petioles 2–3 cm; leaf blades obovate or elliptic, 11–14 × 5–7 cm, thick and papery, leathery when dry, apex acuminate, base round or broadly cuneate, glandular, lateral veins obvious and in 6 to 10 pairs, pubescent on both surfaces. Inflorescences extra-axillary; peduncles pubescent, ca. 4 cm; pedicels 2–4 cm, with purple or purple-brown spotting. Flowers with the corolla inner surface covered with white tomentum, apex slightly reflexed, united toward the adnate base, corolla ca. 1.3–1.5 cm diam.; corona lobes fleshy, with glandules at the corona base, stellate, strongly valvate, lobes with an acute outer angle, with a hump above the middle that encloses a hollow space at the base, lobes with an acute inner angle, red in color, the lower surface channeled in the middle from the base to apex; ovaries glabrous, ca. 2.3 × 2 mm diam. Pollinia oblique, clavate, ca. 600 × 210 μm; caudicle small, ca. 90 × 30 μm. Retinaculum ca. 250 × 100 μm. Stigmas ca. 1.8 × 2 mm diam.

Distribution. *Hoya jianfenglingensis* is only known from the three collections from the type locality. Also in Hainan and potentially sympatric at higher elevations, *H. griffithii* Hook. f. and *H. lasiogynostegia* P. T. Li usually occur between 100 and 1100 m in Jianfengling of Hainan, where these taxa occur in similar humid forested habitats.

Habitat. *Hoya jianfenglingensis* thrives in tropical mountain rainforest, collected at an altitude of 1040 m. It was observed to grow on trees or rocks in the woods, where the microhabitats are humid and foggy. This plant community had a layered canopy dominated by *Ficus altissima* Blume (Moraceae),

Polyalthia consanguinea Merr. (Annonaceae), *Schefflera octophylla* (Lour.) Harms (Araliaceae), and *Lindera robusta* (C. K. Allen) H. P. Tsui (Lauraceae). Vines and other epiphytes were *Tetrastigma planicaule* (Hook. f.) Gagnep. (Vitaceae) and *Ichnocarpus polyanthus* (Blume) P. I. Forst. (Apocynaceae); herbs included *Amorphophallus henryi* N. E. Br., *Zantedeschia aethiopica* (L.) Spreng., and *Scindapsus machurei* (Merr.) Merr. & F. P. Metcalf (these three in Araceae); and ferns included *Pseudodrynaria coronans* (Wall. ex Mett.) Ching (Polypodiaceae) and *Neottopteris nidus* (L.) J. Sm. (Aspleniaceae).

IUCN Red List category. *Hoya jianfenglingensis* is endemic to Hainan, China. The new species is known only from the type collection and has an estimated area of occupancy of ca. 100 km² with a population of less than 60 individuals. Without further investigation, there is insufficient information to estimate the conservation status for *H. jianfenglingensis*, and its conservation status is assessed here as Data Deficient (DD) according to IUCN Red List criteria (IUCN, 2001).

Phenology. The new species was observed in flower in May and July; fruit and seed are as yet unknown.

Etymology. The specific epithet is derived from the type locality in Jianfengling, Hainan Province, China.

Discussion. *Hoya jianfenglingensis* closely resembles *H. fungii* Merr. and *H. carnosa* (L. f.) R. Br., sharing elliptic leaves and an acute outer angle of the corona lobes. The new species differs from the latter two in the presence of indumentum, the smaller

corolla diameter, and the presence of glandules on the basal corona (Table 1).

Paratypes. CHINA. **Hainan:** Jianfengling, 18°44'N, 108°50'E, on tree in montane tropical rainforest, 1040 m, 8 May 2008, *Shao Y. He 0805081* (CANT), *Shao Y. He 0805082* (MO).

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